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ABSTRACT

This literature review examines 12 current works dealing with converting basic research on adult learning, adult development, adult education, instructional methods, and learning theory to practical application in the training of trainers. Focus of the review is on translating principles from scientific language to language more suitable to categories of normal usage, converting research findings from descriptive to prescriptive formulations, and identifying such dimensions of the information as feasibility, costs, limiting conditions, and qualifiers that restrict or channel use. Included among those works summarized are the following: "The Lecture: Increasing Student Learning," by N. J. Fiel; "The Order of Presentation in Persuasion," by Carl I. Hovland; "Adverse and Growthful Effects of Experiential Learning Groups; The Role of the Trainer Participant and Group Characteristics," by C. L. Cooper; "Optimizing Adult Development; Ends and Means of an Applied Psychology of Aging," by J. L. Fazard and S. J. Popkin; "Cognitive Strategy Training and Intellectual Performance in the Elderly," by G. Labouvie-Vief and J. N. Gonda; "Adult Education and Adult Needs," by R. J. Havinghurst; "Theory of Levels of Human Existence and Suggested Managerial Systems for Each Level," by C. W. Graves; and "Improving Inservice Training; The Messages of Research," by B. Joyce and B. Showers. (MN)

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USING CONVERSION AND DESIGN SOCIAL R&D PRINCIPLES TO IDENTIFY SOME PRACTICE IMPLICATIONS FOR THE TRAINING OF TRAINERS

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INTRODUCTION

Educational programs will not be able to keep up with the life they are supposed to sustain and improve unless teachers, students, administrators and trainers continuously examine what they are doing. Singly or in groups the practitioners ought to identify the practices that must be changed to meet the needs and demands of modern life, try out those practices that give better promise and methodically and systematically gather evidence to test their worth.

This process is research and development in education. In this paper I will address the activities that are undertaken by educational practitioners to improve their decisions and engage in better practices. Dean Stark (1980) suggests, among several propositions, that the future of education depends on the development of a professional culture. "There are those who feel strongly that established professions are characterized by bodies of knowledge and practice held in common by their members" (p. 7). The difficulties of developing the professional culture are numerous, but one seems to stand out, namely, that educational practitioners often admit that they have not fully utilized the research knowledge in their field. For example, analysis of the state of the art in adult education suggests that there exists a separation between researchers and the practitioners as in all human services fields. This separation is particularly evident by the lack of adequate utilization of the accumulated potentially useful knowledge gathered by the researchers. Rothman (1980) suggests that one of the reasons for this separation

and lack of utilization of available data is that practitioners are precluded from utilizing this knowledge by their responsibilities to provide services, with the concomitant lack of time to make systematic searches of the "knowledge pool for that which would be useful to them, or make systematic application of what is there (p. 14). This gap between research and practice has widened even further because the perceptions of the two groups are often distorted by their mission. "Practitioners see social scientists as engaged in studies of low social relevance" (p. 15). Social scientists view practitioners as placing low value on intellectuality and high value on action and change for its own sake" (p. 14). The research and development activities advocated by Rothman (1980) offers a resolution in this apparent conflict.

The model provides a systematic process for converting basic research, motivated by the pursuit of knowledge for its own sake, to practical applications. It "is composed of six material stages linked by five operation steps" (p. 22). There are four basic phases of R & D; research retrieval, conversion and design, development and diffusion (p. 23). In this paper I shall attempt to relate the conversion and design phase to training activities.

In contemporary training literature, training is defined as an organized effort at behavior change rather than merely skill training. Training in this context is the implanting of attitudes, knowledge and/or skills into the trainees so their behavior will change and allow them to accomplish some specific purpose or combination of purposes (Michalak and Yager, 1979).

Havelock and Havelock (1973) suggest three orientations to

training: (1) De novo learning - namely providing entirely new attitudes, knowledge or skills, "inputs that are largely unique and original as far as the trainee is concerned" (p. 43). (2) Reinforcing existing attitudes, knowledge and skills in the trainees. From the perspective of learning theory, this is the easiest approach to training. Find out what the trainees are doing "right" and reward them for it. (3) Extinguishing existing attitudes, knowledge and behaviors in the trainees. This is the most difficult training to undertake (p. 44). However, none of these orientations, singly or in combination will automatically insure the success of the training effort. The most promising approach according to the Havelocks (1973) is to provide training in an openly planned training environment in which individual learners can express (and be rewarded for) the positive skills and attitudes they already possess and can feel safe enough to expose less helpful behavior patterns which might be redirected with feedback from trainers and fellow trainees (p. 45).

In traditional training, client trainees are directly provided with training for some purpose, for which trainees are expected to be able to directly use the knowledge, skills and attitudes themselves when they return to their work settings.

The training of trainers is one way of creating a diffusion effect so that the largest number of new trainees or persons with new knowledge and skills can be developed in the shortest period of time (p. 41).

The primary question here is whether the training of trainers model for behavior change is as effective as the traditional model in which client trainees are directly provided with training. Generaliza-

tions and propositions about training stem from research on adult learning, adult development, adult education, instructional methods, and learning theory.

In this paper I shall follow Operational Step 2: Conversion and Design-Formulating Application Concepts. (Rothman, 1980, p. 25) The tasks will be:

1. Translate from scientific language "to language more suitable to categories of normal usage in applied situation" (p. 25).
2. Convert research findings from descriptive to perscriptive formulations.
3. Identify the "reality" dimensionof the information, "such as feasibility, costs, limiting conditions and qualifiers the restrict or channel use . . ." (p. 25).

Definitions and Issues

When training activities are analyzed, it is found that they primarily relate to: adults, to the acquisition of knowledge, the learning of skills or changing of attitudes. In addition, the processes of training seem to go hand in hand with adult development and behavior. Consequently, conversion design ideas must be placed in the context of adult education which operates on the basis of the following definitions and refers to the following issues:

Adult: (1) having adult maturity (2) of or for adults: adult education (3) a person who has attained maturity (4) a person who has attained the legal age of majority (Urdang and Flexner, 1973, p. 19).

Adult: A person (man or woman) who has achieved full physical development and who expects to have the right to participate as a responsible homemaker, workers, and member of society (Houle, 1972).

Learning: (1) knowledge acquired by systematic study in any field or fields of scholarly application (2) the act or process of acquiring knowledge or skill (3) Psycholo. the modification of behavior through practice, training or experience (Urdang and Flexner, 1973, p. 763).

Learning: A form of change in the behavior of those participating in an educational program, primarily cognitive behavior, that is, behavior that has to do with knowing or recognizing, attributing meaning and other intellectual operations (Miller, 1964, p. 18).

Adult learning is highly intentional. "Items are learned with the intention of making direct and immediate use of what is learned. The satisfaction of this intention becomes a principal objective of the learning situation . . ." (McClusky, 1971, p. 429).

In order to facilitate adult learning situations, one must recognize that they differ from children in that (1) adults have more to contribute to the learning of others . . . (2) adults have a richer foundation of experience in which to relate new experiences . . . (3) adults have acquired a large number of fixed habits and patterns of thought and therefore tend to be less open minded. (Knowles, 1970, p. 44).

The time for learning anything is when it is needed. The greatest advantage of learning is when it satisfies some real need, benefits, some cherished purpose, and is made use of at once, and so is kept alive and healthy for future use. (Thorndike, 1928, p. 193)

Adult Development: " . . . reflects the individual's ongoing flow of transactions with his or her societal content, which

> includes people, groups, and organizations related to adult roles in family, work and community. Personal characteristics, such as alertness, accumulated experiences, and personality, influence the extent to which adults reach out and use resources and confront problems in the context of family, community and world. Personal characteristics also affect how an adult responds to the problems and opportunities that are encountered" (Knox, 1977, pp. 81-82).

Training: A learning program in which the learners practice new skills or new behaviors, and/or develop new attitudes. The outcomes are predetermined on the basis of needs assessment. The benefits tend to be immediate with long term effects. The processes vary from assembled training away from the work location, to on-the-job training. The intermediate activities between these training functions are: (1) vestibule training, i.e. simulated shop or office conditions, (2) coaching in which the supervisor deliberately attempts to bring about a change in workers' attitudes, behavior and/or skill, as distinguished from day to day supervision which is concerned primarily with maintenance and regular problem solving, (3) behavior modeling where the trainees are provided with a role model to emulate.

Training of Trainers: Training of trainers creates a cadre of professionals with a new set of skills. These persons, once they have the skills, will be able to effect further changes in a larger sphere (Havelock and Havelock, 1973, p. 39). The training of trainers is one way of creating a diffusion effect so that the largest number of new trainees or persons with new knowledge and skills can be developed in the shortest period of time (p. 41).

Developmental Tasks: These are the basic tasks of living, which must be achieved if people are to live successfully and go on with a good promise of success to later changes of life. A developmental task

is a task which arises at or about a certain period in the life of a person, successful achievement of which leads to happiness and to success with later tasks, while failure leads to unhappiness in the person and disapproval by society and difficulty with later tasks. (Havighurst, 1972).

The emergence of developmental tasks depends on a combination of: (1) the expectations of values of the society, (2) physical maturation, and (3) desires and aspirations of the emerging personality. (Havighurst and Orr, 1960, p. 7)

The implications for adult education are that adult learners are ready to learn those things they "need" to successfully achieve their developmental tasks as workers, spouses, parents, organizational members, and leisure time users. (Knowles, 1973, pp. 46-47)

Models of Training of Trainers: (1) Master Trainer Model - In this process trainers to be trained identify a master trainer - or training organization such as University Associates Publishers & Consultants headed by Pfieffer and Jones or Human Resource Development Associates headed by Ron Lippitt, and participate in training events, workshops or clinics that they conduct. The trainers to be trained often know what they seek, usually they have some experience in training or teaching. Based on their experiences with the Master trainers, they develop their own training processes in whatever areas they work in, i.e., human relations training, management, leadership of values clarification. The distinguishing characteristic of this process is that the trainers to be trained choose the master and with his/her guidance develop their own training style and processes.

(2) Replication Model - In this model, a trainer or an organization develops a training program or a process. A trainer who needs to train others participates in the training and then replicates it as often as needed. Occasionally the original trainers will devote some time to discuss the process of replication. The distinguishing characteristics of this model is that there are limited or no planned activities to prepare the trainer-to-be for the process of training others.

(3) Emulation Model - In this model, not much is left to chance or proclivities of the trainer-to-be trained. A Manual is prepared in which all the steps of training are spelled out - including in some manuals the jokes the trainer will tell. In some instances a training session may be conducted on how to use the manual and provide some role models for the trainers-to-be. The distinguishing characteristic of this model is the manual and/or script, and the assumption that anyone could train others if they follow the manual.

(4) Open Training Model - This model is based on the design of training programs by Ron and Mary Havelock. They believe that the transfer of training goals include a trilogy of attitudes, knowledge and skills and should be conducted in an open training model. In this model, the design takes into account the trainer-to-be trained current skills, knowledge and attitudes, and stresses individual learning. They also stress learning to learn and skill practice in teaching others what one has learned. An effort is made to preview and prepare for future back home activities. (Havelock and Havelock, 1973).

(5) Apprenticeship Model - This model relies heavily on modeling and reinforcement. The trainer-to-be trained works with a master trainer - or another trainer - and learns the training processes as

they work together.

Methodology

This section describes the procedures I employed in formulating training application concepts (Rothman, 1980). A statement of the problem will be presented. Following the problem statement, the discussion will focus on the research findings. Next I shall translate the ideas generated by the research and present application concepts. The "additional empirical investigation and development work (which) are necessary in order to confirm the feasibility and reliability of the application concepts" (p. 89) are not within the scope of this paper, and will only be suggested as a next step in the process of R & D.

Statement of the Problem - The problem to be examined relates to the transferability of training, i.e. can trainees train others to the level they have achieved, and will the impact of this training be similar (statistically) with a traditional training model.

The Process - In this paper I shall follow Rothman's (1980) suggestions for converting scientific generalizations about adult learning, teaching methods, training designs, and adult development into practical applications for training adults. Four basic rules outlined by Rothman (1980) will be followed:

> "Stay close to the actual data"
> "Push ahead from findings to practice implications"
> "Be specific about directives suggested to the practitioners"
> "What does this finding tell the practitioner about what they ought to do!" (p. 102).

The sample literature to be reviewed will be relatively current. The selections used will not represent an exhaustive literature search, but a synthesis of essential research findings in the area of training, to demonstrate the feasibility of this procedure. As a secondary gain, I hope to present some training design truisms rooted in research findings.

The Research

Fiel, N.J. The lecture: Increasing Student Learning. Journal of Medical Education, 1976 51 496-499.

"The lecture is the most inefficient method of diffusing culture. It became obsolete with the invention of printing. It survives only in our universities and their lay imitations and a few other backward institutions." Ever since B. F. Skinner (1948) wrote this in Walden Two the lecture has been under attack as the primary mode of presenting educational content. This study involved a single lecture given to second year medical students. The purpose of the study was to determine if significant learning of the lecture content will occur. Significant learning was defined as mastery of 75 percent on a post test of predetermined required content. The participants averaged 90 percent mastery of the required content demonstrating that significant learning occurred during the lecture. The evaluation process was sufficiently rigorous to suggest internal validity.

Lecture, though much criticized is still the primary mode of university teaching and general training. This study suggests that it is a viable process if the special care is taken in its preparation, as detailed by Fiel. Instead of summarizing the material from text

books and current literature the lecture materials were "assembled on the basis of objectives and task descriptions." (p. 497).

This method had two important elements: identification of specific content that students were to learn during the lecture which was consistent with both type A and type B learning*, to reduce interference. The second element was "the development of an appropriate lecture format that culminated in a question and answer setting in which immediate feedback was given to the student as to the correctness of their answers. This compelled involvement of the students in the learning process and greatly limited the recitation aspect of the lecture" (p. 497). To emphasize the content that students were required to learn, overhead transparencies were prepared relating to the objectives and task descriptions.

The successful results of this study were accomplished with considerable amount of time and effort.

Conversion Design:

A. Prepare a lecture on the basis of objectives and task descriptions.

B. Emphasize visually and during the lecture the content the trainee is required to learn; i.e. through color coding or different type.

C. Provide trainees with a complete handout in which all required content is labelled. This reduces the need for note taking, and permits students to concentrate on and interact with the presentation.

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*Type A learning the student behavior is changed in accordance with the teacher's purpose. With type B learning the student's learning is changed in accordance with the student's purpose. The two may be in conflict (Jahoda and Thomas, 1966).

D. Reduce the conflict between type A and type B learning. Since type B learning is trainee motivated, elicit their understanding of the content before the lecture. This can be done through questions in which trainees share their knowledge and summarize it on newsprint to share with the total group. Having identified the major trends of type B learning in this manner, the lecturer modifies his presentation to reduce the conflict and bring about type A learning.

E. Stay close to the purpose and objectives of the lecture. Tangents distract.

F. Reading minds, is at worst a vaudeville act, or at best a serious topic for research at Duke University. The trainees should not have to read the presenter's mind, the objectives of the training and processes (i.e. lecture) should be stated in advance.

Hovland, Carl I. (et al.). The Order of Presentation in Persuasion (Yale Studies in Attitude and Communication) New Haven: Yale University Press, 1966.

> The main theme of this work is the study of the effects which communication stimuli have upon attitudes and behavior. The variables they studied are: (a) The order of presentation of arguments: Should the strongest argument come last? (b) Primacy-recency effectiveness: In a two-sided debate, should you present your case first or last? (c) One-sided or two-sided presentation: Should you present only your position, or your opponent's and then refute it? (d) Explicit or implicit conclusion drawing: Should you draw the conclusion for your audience or should the audience draw their own?

Conversion Design:

1. The trainers' effectiveness is increased if they initially express views that are also held by the students.

2. When two sides of an issue are presented successively by two

presenters, the first presenter does not have the advantage unless he/she has a high credibility (defined as expertise and trustworthiness).

3. When an authoritative trainer plans to mention pro and con arguments, they should mention the pro arguments first.

4. When opposite views are presented successively, the one presented last will be more effective.

5. In a school setting recency is more effective; with a jury, primacy is more effective.

6. There will be more opinion change in the direction the trainers want if the audience responds publicly to the issue before the second side is presented.

7. When contradictory information is presented in a single communication, those items presented first will dominate the impression received.

8. First impression dominance will be reduced if contextual noise is introduced, or the audience is involved in activities between the two blocks of information or by warning the audience against deciding on first impressions.

9. There will be more opinion change in the direction the trainers want if they state their conclusions explicitly rather than let the audience draw their own, except when working with an intelligent audience. Then, implicit conclusion drawing (let them work) is better.

10. Find out early the opinions of the trainees in order to discover the issues to which they will be favorable.

11. Place early on the agenda those issues toward which members of the audience or class are favorable in order to increase interest and

attention.

12. The audience/class are individuals. Know them!

Cooper, C. L. Adverse and growthful effects of experiential learning groups: The role of the trainer participant and group characteristics. Human Relations 1977, 30, 1103-1129.

> The purpose of this study was to examine the characteristics of experiential learning groups associated with adverse and growthful effects. Data were collected on trainer behavior/personality, participant personality/conditions of participation, and group process characteristics, and these were linked to two generic outcome measures (i.e. other trainee perceptions and work colleague reports). It was found that both positive and negative effects of such groups are (a) strongly related to the trainer's behavior and personality (b) unrelated to group process and structured variables (e.g. degree of confrontation, level of intimacy in the group, etc. and (c) associated with trainee's personality predispositions in the short run but not in the long term. The implications of these findings were discussed (p. 1103).

The basic question they attempted to answer in this research, was "what are the antecedent learning conditions that lead to positive and negative effects of small group training programs absed on experiential methods" (p. 1106).

Two hundred and twenty-seven male participants and 32 trainers in 12 management-development programs using small group methods.

The author had earlier (1973) suggested that the following characteristics are essential to all experiential learning groups:

(A) They are designed so that learning takes place primarily in small groups, allowing a high level of participation, involvement and free communications.

(B) They are "process" as distinct from "content" oriented, that is, the primary stress was on the feeling level of communications

rather than solely on the informational or conceptual level.

(C) They are all oriented towards improving the human relations or social skills of managers as distinct from their task or technical skills.

All programs attempted to provide the manager with a better understanding of the dynamics of social interaction, communications between people and social sensitivity.

The results of the study may shake some firmly held beliefs about training in general and sensitivity training in particular.

First "trainees attending small-group training programs perceive participants "at risk" or who may have been "hurt," as dominant, self-assured and not to open to feelings in groups, who primarily worked with closed, unreliable and withdrawn trainers (p. 1121).

Second, participants who have gained most from their experience, were perceived as realistic, self sufficient, and open to their feelings in groups, tended to be with relaxed, unworried, open and experimenting trainers (p. 1121).

Third, "trainer personality and behavior during training are very strongly linked to the most positive and least negative change in subsequent work performance and relationship at work, particularly relaxed, self sufficient and tranquil trainers" (p. 1121).

Most surprising was that participants who are seen to gain the most were those who were sent by their organizations on the training programs as opposed to those who self selected their own learning experience (p. 1121). "One of the most consistent findings across all the outcome measures was that participants helped most and hurt least as judged by other trainees and those who showed the least negative and

the most positive change in subsequent work performance and relationships were found in groups with trainers who tend to be relaxed and unworried and are open to their own feelings, i.e. in Rogerian terms are congruent" (p. 1121).

Conversion Design:

A. Voluntary participation facilitates motivation to learn and enhances the impact. However, being sent to training without duress will lead to similar results.

B. The trainers' relaxed and unworried style combined with openness to their feelings and the group's are essential to the success of human relations training.

C. Participants must have as much information as possible about the training situation to make intelligent choices and reduce the conflict between type A and type B learnings.

Fozard, J. L., and Popkin, S. J. Optimizing adult development, ends and means of an applied psychology of aging. American Psychologist, 1978. 33, 975-989.

Fozard and Popkin (1978) argue that from the present knowledge about adult development and the person-environment interactional relationships in the adult years, from 20-65, "interventions during and middle adulthood for an optimum old age are both possible and desirable." The data that they present suggests that a program of intervention for memory problems of the elderly -- "including cognitive skill training, individual counseling and the redesign of tasks -- is both necessary and feasible" (Fozard, et al., 1978, p. 983).

The major issues, according to Fozard and Popkin (1978) "in physical and recreational activities relative to age involve their design and organization rather than the design of equipment for such activities" (p. 984).

In a survey of the literature they conducted, it was substantiated that age was not a very powerful predictor of involvement in leisure activities. They discovered that when self-esteem was high and risk taking behaviors were present, older adults tended to be more active and socially involved. Practical implications of these findings are that counseling and activities involving competitive and physical activities to persons of different ages will tend to reduce the limiting effects of the commonly held public perceptions of slowness and inactivity.

A sense of well being is a result of an interplay among physical and mental health and the expressive aspects of leisure and work. The current desires, fears, and expectations for aging are shaped partly by the models of aging provided by elderly parents, relatives and friends, and partly by individuals' own choices of activities during the adult years. A major goal of adult education should be to help individuals recognize the full range of choices of activity that indeed affect the way in which they age.

The degree of choice about one's pattern of aging is increasing continuously because of the improvements in health care, technology, flexibility of work schedules, legislation regarding retirement, and advances in the knowledge about adult development. In addition, opportunities for choice in selecting physical and social activities are important to the maintenance of mental and physical health. For

example, our knowledge of adult cognitive function suggests that age related differences in memorization "are related to the short-term retention losses known to occur in older age." (Fozard and Popkin, 1978, p. 983). There is also evidence that memorization difficulties "may be reduced or eliminated by cognitive skill training in the use of mnemonic devices, including interactive emagery techniques for paired associate tasks." The data presented (by Fozard and Popkin) further suggest that increased opportunities for practice on tasks can reduce age differences in performance.

Conversion Design: The major barrier to involving older persons in training is their belief that "you can't teach an old dog new tricks." The practical implications to overcome these attitudes and to facilitate change are:

A. Arranging for counseling to reduce age related emotional problems that interfere with memory and learning.

B. Provide for cognitive skill training for elderly trainees.

C. Provide counseling to treat anxiety and/or depression and poor self image that may be a result or cause of memory complaints. (Fozard and Popkin, p. 984).

Labouvie-Vief, G., and Gonda, J. N. Cognitive strategy training and intellectual performance in the elderly. Journal of Gerontology, 1976, 31, 327-332.

The decretment paradigm of aging states that the older you get the less you are able to perform as a thinking adult. The word cognition is frequently used in its generic term for the processes which

enable an organism (the adult human in this case) to be aware of, or obtain knowledge of, an object -- conceiving, perceiving, judging, reasoning, or recognizing" (Bischof, 1976, p. 133). In thinking, cognition means putting things together and relating events. In cognitive theories, such relating is assumed to be an active connecting process, not a passive connection of events through external association and repetition. Research in the area of adult intellectual development and aging has indicated age associated performance deficits when young and old samples are compared. Usually these differences are interpreted in terms of a maturational model, emphasizing biological decretment. In general, policy makers and child educators have held these decretment views of adults and have acted accordingly in allocating resources to adult education.

In recent criticism of adult development research by Labouvie-Vief and Gonda (1976), they called for reinterpretation of the decretment oriented views of aging. They "conceptualized reduced intellectual performance as experiential deficit that can be reversed by concentrating on training of certain component skills" (Labouvie, et al., 1976, p. 327). The study that they conducted examined the effect of strategy training on intellectual performance in the elderly. They demonstrated that through training, significant incretments in intellectual performance can be demonstrated. In addition, the training effects were "of surprising broad nature, as they showed some generalization cross tasks as well as time" (Labouvie, et al., p. 331). These findings offer strong arguments against the traditional implication held by many educators that intellectual aging decretments are irreversible. In addition, the data suggested "that there may be a good deal more plasticity to

intelligence in the old age than has been acknowledged thus far" (Labouvie, et al., 1976, p. 331). The implications for trainers are that "changing environmental contingencies play a role in modifying performance levels in the elderly" (p. 331), hence expanded educational opportunities will impact positively on the development and general well being of older adults.

Conversion Design: In working with older trainees:

A. Slow down the pacing of events presented in the learning situation.

B. Provide assistance for older trainees to organize the materials such as classifying by likeness, shape, color, usage.

C. Provide emotional support. Older adults think they cannot learn and have poor self concepts about learning.

D. Employ visual and aural devices. The more senses the trainees use the better they learn and remember.

Havinghurst, R.J., and Orr, B. Adult education and adult needs. Chicago, Ill.: Center for the Study of Liberal Education for Adults, 1960.

Havinghurst, R.J. Developmental tasks in education (3rd edition). New York, McKay, 1972.

The most popular theoretical framework for adult development in the eyes of practitioners does not focus on processes of personality nor on the events that produce change, but instead on the tasks of living which must be achieved if individuals are to live successfully and go on with a good promise of success to later changes of life (Havinghurst and Orr, 1960, p. 7).

The general idea of the developmental tasks is that there are certain skills or tasks which adults must master during a specific span of time in the life (stage) and that mastery of these tasks is crucial to the adult's further development in the next stage or period of life.

Havinghurst (1960 p. 1) is convinced that adulthood is a developmental period in almost as complete a sense of childhood and adolescence are developmental periods. He (Havighurst, 1972) divides the life span in six age periods:

Early Childhood	Birth to 5 or 6
Middle Childhood	5 or 6 to 12 or 13
Adolescence	12 or 13 to 18
Early Adulthood	18 to 35
Middle Adulthood	35 to 60
Late Maturity	60 and over

He further delineates the development tasks that should be mastered at each age period. Accordingly, failure to master the tasks at any level creates developmental problems in subsequent stages.

DEVELOPMENTAL TASKS OF ADULTHOOD:

I. Developmental Tasks of Early Adulthood

- A. Selecting a Mate
- B. Learning to Live with a Marriage Partner
- C. Starting a Family
- D. Rearing Children
- E. Managing a Home
- F. Getting Started in an Occupation
- G. Taking on Civic Responsibility
- H. Finding a Congenial Social Group

II. Developmental Tasks of Middle Age

- A. Achieving Adult Civic and Social Responsibility

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B. Establishing and Maintaining an Economic Standard of Living
C. Assisting Teenage Children to Become Responsible and Happy Adults
D. Developing Adult Leisure-Time Activities
E. Relating Oneself to One's Spouse as a Person
F. Accepting and Adjusting to the Physiological Changes of Middle Age
G. Adjusting to Aging Parents

III. Developmental Tasks of Later Maturity

A. Adjusting to Decreasing Physical Strength and Health
B. Adjustment to Retirement and Reduced Income
C. Adjusting to Death of Spouse
D. Establishing an Explicit Affiliation with One's Age Group
E. Meeting Social and Civic Obligations
F. Establishing Satisfactory Physical Living Arrangements

(Havinghurst, 1972)

These developmental tasks are set by three forces: (1) the expectation of values of the society, (2) the biological maturing and then aging, (3) the individual's own personal values and aspirations (Havinghurst and Orr, 1960, p. 7). Thus, developmental tasks emerge due to physical maturation, from the pressure of cultural processes upon individuals, from the desires, aspirations and values of the emerging personality, and they arise in the majority from combinations of these processes acting together (Havinghurst, 1972).

Conversion Design: The concept of developmental tasks appeals to adult educators and trainers, because they find it useful in linking educational objectives to developmental tasks and timing the educational activities to the needs of the adults.

In working with a heterogeneous age group of trainees the trainer must provide them with time to get acquainted and clarify their developmental tasks, lest type B learning will dominate the training event. For example, a group of trainees in the early adulthood stage

working with a middle age group may find themselves at different motivational levels, different interests and with different personal agendas. Allocating time for sharing, clarifying issues, getting acquainted, disclosure will reduce intragroup conflicts, and increase productivity and learning (Hare, 1962, p. 367).

The notion of growth, development and change is integral to much of adult education literature. Adults are no longer viewed as finished products at age of 16, 18 or 21. Rather adulthood is viewed as a period of change, psychologically, socially, physiologically. Adult educators/trainers need to respond with activities designed to take into account adult development.

McClusky (1971) suggests that commitment is another useful way of looking at what happens to a person with the passage of the adult years. Commitment is defined "as an intentional attachment to a responsibility of a kind commonly required by and unique to the adult situation" (p. 422). This concept helps to explain the "locked in" character of adult life and resistance to learning. It suggests that resistance to learning may not reflect a reluctance to learn on the part of adults, but simply unwillingness to change some of their basic commitments around which their life is organized. The implication for adult education and social policy in this direction are to ease these commitments through paid leaves of absence, allowances for family expenses, tuition waivers and participation in the decisions about the content of the educational experience.

A. Allocating time for trainees to get acquainted, to share views, clarify issues and for disclosure, will reduce intergroup conflict and

increase productivity and learning.

B. Training must be based on assessed needs which are recognized by the trainees.

C. Training objectives and procedures must be clearly stated to permit trainees to make informed choices.

D. For lifelong learning activities provide leaves of absence with pay, tuition waivers.

E. Work place related training activities should be financed by those who send the trainees.

F. For training to be most effective, trainees should participate in all decisions concerning the training.

Graves, C. W. The deterioration of work standards. Harvard Business Review, 1966. 44, 117-126.

Graves, C. W. Levels of existence: an open system theory of values. Journal of Humanistic Psychology, 1970. 10, 131-155.

Graves, C. W. Theory of levels of human existence and suggested managerial systems for each level. Unpublished manuscript, 1971. Available from the Institute for Business and Community Development, University of Richmond.

Graves advocates that the psychological growth of mature people is an unfolding process marked by the progressive subordination of older lower-level behavioral systems to higher-level behavioral systems. Each successive level is a state of equilibrium through which people pass to other states of equilibrium. At each stage, individuals have a psychology that is unique to that level. Actions, feelings, motivations, ethic values, and thoughts are all behavioral manifestations which

are required to deal with problems at a particular level. Also, persons at each level prefer a particular style of teaching. That is, in different levels of existence, individuals act, feel, think, judge and are motivated through different teaching styles. People do not mechanically grow to another level of existence. Constitutionally, they may not be equipped to change in an upward direction although the conditions of their environment change. People may continue to grow, under certain conditions, through a systematic series of ordered behavioral systems or stabilize and live a life at any one or a combination of levels in the hierarchy. Thus, persons live in a potentially open system of needs, values and aspirations, but often settle into what approximates a closed system. In order for people and their societies to grow, they must subordinate old values and behaviors to develop new values and behaviors appropriate to new states of existence. Develop and discard, retain and rearrange, seems to be nature's way of handling things which should be emulated by people. Graves (1970) indicates that there are eight major systems of existence:

Levels of Existence	Nature of Existence	Characteristic	Training Needs
8	Experientialistic	Primarily interactive because varied experiences	More diverse experiences
7	Cognitive	Has confidence in ability to survive and succeed	Additional technical professional training
6	Sociocentric	Concerned with social issues, democratic	Participative management & decision making

(cont.)

Levels of Existence	Nature of Existence	Characteristic	Training Needs
5	Materialistic	Acquisition of goods and prestige	Utilitarian for advancement, Value clarification
4	Saintly	Acceptance that there is an all powerful external force which guides people and nature	Skill training in doing job better
3	Egocentric	Competition, aggressiveness "eye for an eye" thinking	Simulation training
2	Tribalistic	Existence is based on myth and tradition. Peer group values dominate	On the job training Coaching Supervision
1	Automatic	Primary concern is staying alive	Directive intervention Telling people what to do.

*Training needs is my conversion design based on Grave's postulates.

Katz, L. G. Developmental stages of preschool teachers. The Elementary School Journal, 1972. 50-54.

I am including this article because I think it provides a framework for thinking about training. Although it lacks empirical evidence, my own experience in staff development supports these ideas.

Katz suggests that it may be meaningful to think of teachers as having developmental sequences in their professional growth. She suggests at least four developmental stages for teachers. Individuals may vary greatly in length of time spent in each of the four stages outlined below:

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Stage 1: Survival. During this stage which may last throughout the first year of teaching, the teacher's main concern is survival. The questions that express the preoccupation with survival are: "Can I get through the day in one piece? Can I make it until the end of the week? Until next vacation? Can I really do this kind of work day after day? Will I be accepted by my colleagues?" (p. 50). During this period the training needs for the teachers are support, understanding, and on site technical assistance. Trainers should have enough time and flexibility to be on call as needed.

Stage 2: Consolidation. Usually by the end of the first year the beginning teachers decide that they can survive. They are ready to consolidate the gains made during the first stage and "to differentiate tasks and skills to be mastered next. During Stage 2 teachers begin to focus on individual children who pose problems and troublesome situations" (p. 51).

During this stage on-site help continues to be valuable. A trainer can help teachers by exploring problems with them. The interventions need to be specific, and the training and technical assistance resources need to be wide ranging to be able to respond to the diverse questions raised by the teachers. Opportunities which provide for sharing ideas with colleagues at the same stage of development can reduce feelings of inadequacy and frustration that these stage teachers feel.

Stage 3: Renewal. Often, after three or four years of teaching, the teachers begin to tire of doing the same old things. They begin to seek information on new ways, new ideas, new materials, new approaches. During this stage teachers find it rewarding to meet colleagues from various programs on both formal and informal occasions. Teachers at

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this stage are particularly receptive to regional and national conferences. They may be best served through teacher centers. "These are places where teachers can meet to help one another learn or relearn skills, techniques and methods. At these centers teachers can exchange ideas and organize special workshops" (pp. 52-53).

Stage 4: Maturity. "Some teachers may reach maturity, Stage 4, within three years, others need five years or more" (p. 53). Teachers at this stage have come to terms with themselves as teachers. They now ask abstract questions about the historical and philosophical roots of what they are doing. Based on the experience they have had they now search for insight and perspective.

Their training needs can be met through seminars, institutes, courses, degree programs and conferences dealing with diverse issues not directly related to their job.

Conversion Design: The conceptual framework of stages of development is rooted in the maturation-learning principle which suggests that certain training should not be undertaken until the person is ready for it. Pushing persons too far ahead of their maturation level may under some circumstances impose harmful stresses, i.e. asking them to perform at their level of incompetence.

Applying Katz's (1972) principles of developmental stages of teachers to other professions or work activities seems reasonable. Nurses, psychologists, managers, social workers, physicians, supervisors seem to follow similar stages in their work related life. Consequently, the following practice implications to training may transcend several professions:

A. Whenever possible training events should be organized for homogeneous groups. If this is not feasible the next best thing is to arrange for homogeneous small discussion groups to work on specific group related problems.

B. The timing of training should be shifted so that teachers in Stage 1 have on-site technical assistance and support.

C. Trainers should recognize and plan for the different stages of development the same way they recognize and plan for individual differences in the trainees.

D. Training locations should be selected in a manner consistent with the developmental tasks and working situations of the participants. As persons move beyond the survival stage, training can be removed from the work place.

E. Where feasible, on-site assistance, access to specialists, consultants and advisors that relate to the specific concerns of Stage 2 trainees will improve the cost/benefit of the intervention. When this is not feasible allocating time for Stage 2 trainees to share specific concerns and meet with advisors and consultants may help.

F. Sending Stages 1 and 2 workers to a training event that addresses general macro type issues in the work place is a waste of time and resources.

Joyce, B., and Showers, B. Improving inservice training: The messages of research. Educational Leadership, 1980, 37, 379-385.

The essence of this study is that to be effective training should include theory, demonstration, practice, feedback and application

in the work place. Four levels of impact have been identified by the authors:

Awareness - realizing the importance of an area and beginning to focus on it. "With inductive teaching, for example, the road to competence begins with awareness of the nature of inductive teaching, its probable uses and how it fits into the curriculum" (p. 380).

Concepts and Organized Knowledge - these are the cognitive elements of the new knowledge or skills. They provide the intellectual control over relevant content.

Principles and Skills - these are the tools of action. At this level the trainees learn the skills for the job. For example, training in inductive teaching they "learn how to help students collect data, organize it, build concepts and test them" (p. 380). At this level there is a potential for action.

Application and Problem Solving - finally the trainees transfer the concepts, principles and skills to the work place. They begin to use the strategy and integrate the skill into their style.

Joyce and Showers suggest that it is only after the fourth level has been reached, can one expect impact on the ultimate clients. The major components of training that were identified are:

1. Presentation of theory or description of skill or strategy;
2. Modeling or demonstration of skills or models of teaching;
3. Practice in simulated and classroom setting;
4. Structured and open-ended feedback (provision of information about performance);
5. Coaching for application (hands-on, in-classroom assistance with the transfer of skills and strategies to the classroom (or workplace) (p. 380).

The article further relates data on the effectiveness of the components. For example, "presentation of theory can raise awareness and increase conceptual control of an area to some extent. However, it is for relatively few teachers that it results in skill acquisition" (p. 381).

"When awareness and knowledge have been achieved, practice is a very efficient way to acquire skills strategies whether related to the timing of style or the mastery of new approaches" (p. 381).

Conversion Design:

A. In designing training events for new skills and behaviors, insure that the five components of training identified by Joyce and Showers can be implemented. Be prepared for lesser impact if they cannot be accomplished.

B. Allocate sufficient time to cover all five components.

C. Arrange for training facilities that will permit safe practice under controlled conditions.

D. Arrange for on-the-job coaching for continued feedback until skills are mastered.

Argyris, C., and Schon, D.A. Theory in practice: Increasing professional effectiveness. San Francisco: Jossey-Bass, 1974.

Argyris, C. Double-loop learning: Implications for individual and organizational development. Lecture presented at The University of Michigan, School of Education, March 1979.

Most interpersonal skills and common learning occurs through compliance and identification which are rooted in learning through rewards and penalties, rather than through internalization, according

to which individuals try out new behaviors and make it part of their repertoire because it is intrinsically satisfying. Argyris and Schon (1974) identify the most common learning as model I learning, or single loop learning, "because it is like a thermostat that learns when its too hot or cold and turns the heat on or off. It does its job without questioning the job. Learning that requires the detection and correction of error in underlying values and assumptions, is double loop learning" (Argyris, 1979, p. 1).

> The primary features of model I behavior are that people design their actions to satisfy four governing values. "They are (1) achieve the purpose as the actor sees it, (2) maximize winning and minimizing losing, (3) minimize the expression of negative feelings and be (4) rational. The two behavioral strategies of model I are, (1) advocate your position and unilaterally control others (in order to accomplish your purpose to win) and (2) unilaterally and covertly act to save your own and/or the other's face (pp. 3-4).

Model I learning encourages and reinforces competitive win/lose group and intergroup dynamics. It also meshes with two social mechanisms that according to several researchers are typical of everyday life in our society - attribution and social evaluation. Attribution means unilaterally assigning intentions to others, without public testing. Social evaluation means that individuals privately compre themselves with others without open testing.

Model II or double loop learning is an open ended process which permits progressively testing of assumptions and constant feedback. The governing variables are: valid information, free and informed choice, internal commitment to choice and constant monitoring of its implementation.

These three governing variables are inter-connected and because

valid information is essential to informed choice, freedom of choice depends on valid information, people tend to feel more internally committed to a freely made decision. Individuals who feel responsible for their decisions will monitor them to see that they are implemented and will also seek feedback to correct errors and detect unintended consequences, and will therefore tend to obtain valid information (Argyris and Schon, 1974).

The reason why double loop learning is not common in our lives is related to the technology that scholars use to generate knowledge about learning. Argyris (1979) points out that the rigorous research in social science must be "descriptive and it must produce propositions that are precise and accurate" (p. 12).

> This technology is consonant with Model I, in the sense that the researchers unilaterally control the tasks, the time perspective, and the purpose of the research. This places the subjects in a dependent and submissive situation. Subjects who resent or resist such conditions may distort their responses. But the deeper problem is that many people are acculturated to these conditions. Hence, the defensive responses plus the individuals blindness that is built into Model I conditions are operating when research is conducted. These conditions could operate to prevent important data from being reported or observed (p. 13).

Another problem is that the purpose of social science to understand the world as it is, thus its inquiry will be limited to the world as it is and so will its knowledge. If the world is consonant with model I "then the propositions that it produces will be limited to these models" (p. 13). As its currently operating social science cannot provide liberating alternatives without developing models of worlds that are genuinely different from those presently investigated. Maybe social R & D conversion design processes can bring us closer to

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double loop learning and a model II world? However, it may be limited by the overall process which is rooted in model I thinking.

Conversion Design:

A. Arrange for structured safe environment (not win/lose) so that trainees may explore their values and theories in use.

B. For skill training, follow a series of steps, which though clearly intermingled, but are separated for the purposes of discussion:

1. modeling or demonstration
2. practice in protected situation (new world)
3. practice with regular risk free feedback
4. follow-up help or coaching

C. Use a learning teaching process that facilitates experiencing, identifying, analyzing and generalizing (EIAG) to help trainees acquire knowledge, skills and change their attitudes.

SUMMARY

The conversion design process outlined by Rothman (1980) suggested an approach to review the literature on training in order to formulate practical application for the training of trainers. The twelve (12) sources selected for this paper were chosen because they were consistent with my goal for encouraging shared responsibility in the teaching-learning process between trainer and trainee.

I only presented a sample of the vast knowledge pool that affects this subject because I lacked the time, financial and energy resources needed to follow the procedures of social R & D. This project helped to clarify my own thinking as a trainer, introduced me to new ideas,

unfamiliar research and reaffirmed my convictions about learner participation in decisions about the teaching-learning process. This assignment clearly increased my repertoire of training designs and training techniques.

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